

II. REPLY UNDER 37 C.F.R. § 1.111

REMARKS

Claims 1-3, 12, 25, 27, 31, 33, 60-63, 68-71, 73-75, 78, 80, 82, 84, 86, 90, 92, 94 and 96 have been amended, claim 87 has been cancelled, and claim 102 has been added. Claims 1-102 are pending in the present application, of which claims 13-24, 34-54 and 101 are withdrawn (but not cancelled).

A. The 35 U.S.C. § 102 Rejections Over Kenoyer

Independent claims 1, 25, 60 and 94 are novel and nonobvious over Kenoyer for at least the following reasons.

Amended independent claim 1 recites (with emphasis added):

A method of providing multiple image streams for transmission across one or more video transmission interfaces, comprising: receiving at least one digital image data input stream, said digital image data input stream containing digital image information; creating at least two digital image data streams from said at least one digital data input stream, each of said at least two digital image data streams comprising at least a portion of said digital image information; converting said at least two digital image data streams into at least two respective output image streams; and providing said at least two respective output image streams for transmission without image compression from a video camera across said one or more video transmission interfaces to a digital video recorder ("DVR").

Amended independent claim 25 recites (with emphasis added):

A method of processing digital image data, comprising: providing said digital image data; processing said digital image data in a first processing operation to create first processed image data; processing said digital image data in a second processing operation to create second processed image data; and providing said first and second processed image data for communication together without image compression from a video camera across one or more video transmission interfaces to a digital video recorder (DVR); wherein at least one of: said first processed image data has an image resolution that is different from an image resolution of said second processed image data, or said first processed image data is provided for communication across said interface at an image frame rate that is different from an image frame rate at which said second processed image data is provided for communication from said video camera across said video transmission interface to said DVR, or said first processed image data comprises a different portion of said digital image data than said second processed image data, or a combination thereof.

Amended independent claim 60 recites (with emphasis added):

Multiple stream image creation circuitry configured to receive at least one digital image data input stream containing digital information, said multiple stream image creation circuitry comprising multi-stream image processing circuitry configured to: create at least two digital image data streams from said at least one digital data input stream, each of said at least two digital image data streams comprising at least a portion of said digital image information; convert said at least two digital image data streams into at least two respective output image streams; and *provide said at least two respective output image streams for transmission together without image compression from a video camera across one or more video transmission interfaces to a digital video recorder ("DVR").*

Amended independent claim 94 recites (with emphasis added):

A system for processing digital image data, comprising image creation circuitry configured to: process said digital image data in a first processing operation to create first processed image data; process said digital image data in a second processing operation to create second processed image data; and *provide said first and second processed image data for communication together without image compression from a video camera across a video transmission interface to a digital video recorder (DVR);* wherein at least one of: said first processed image data has an image resolution that is different from an image resolution of said second processed image data, or said first processed image data being provided for communication across said interface at an image frame rate that is different from an image frame rate at which said second processed image data is provided for communication across said video transmission interface, or said first processed image data comprises a different portion of said digital image data than said second processed image data, or a combination thereof.

In contrast to the pending claims, Kenoyer relates to “[a] videoconferencing system 100 [that] includes a first conferencing station 102 and a second conferencing station 104,” and in which “[t]he first conferencing station 102 communicates with the second conferencing station 104 through a communication channel 118 [that] can be *an Internet, a LAN, a WAN, or any other type of network communication means*” (see paragraph 0023) (emphasis added). Each “conferencing station 200 includes a display 202, a high resolution conferencing bar 204, and a video processing unit 206”(see paragraph 0024). Kenoyer’s video processing unit 206 includes “[a] communication processing engine 318 [that] *encodes and compresses* this communication signal and sends it to the transceiver device [which] forwards the communication signal to a remote site through the communication channel 118” (see paragraph 0036) (emphasis added).

Upon receipt of the transmitted communication signal at a conferencing station, “communication processing engine 318 then *decompresses and decodes* the communication signal to recover the audio signal, position signal, and two video data streams” (see paragraph 0037) (emphasis added). Thus, Kenoyer’s video conferencing system employs communication signals that are *compressed and encoded prior to* transmission between conferencing stations across a *network communication means such as a LAN or WAN*.

Kenoyer does not disclose, teach or suggest transmission of image data or image streams *without image compression* from a video camera across *a video transmission interface/s* to a digital video recorder (“DVR”). As described in the specification of the present application, a video transmission interface includes NTSC, PAL, and SECAM compatible formats *as opposed to* Kenoyer’s network communication means such as LAN or WAN (see page 52 of the present application). For at least these reasons, each of independent claims 1, 25, 60 and 94 are novel and nonobvious over Kenoyer, as are the claims dependent therefrom.

B. The 35 U.S.C. § 103 Rejections Over Kenoyer in View of Washino

Independent claims 78 and 86 are nonobvious over Kenoyer in view of Washino for at least the following reasons.

Amended independent claim 78 recites (with emphasis added):

A video camera, including multiple stream image creation circuitry comprising multi-stream image processing circuitry, said multi-stream image processing circuitry comprising at least one window circuitry component configured to extract a selected portion of an original higher resolution image frame to form a lower resolution windowed partial image, at least one image scaler circuitry component configured to scale the lower resolution windowed partial image, at least one image deconstruction circuit component configured to segment an original image frame into two or more segmented higher resolution frames or tiled higher resolution images, *at least one alignment data circuitry component configured to insert at least one of tile identification*

information or horizontal alignment information or vertical alignment information into unused lines of said segmented higher resolution frames or tiled higher resolution images, and at least one image mux circuitry component configured to select either said scaled lower resolution frames from said image scaler circuitry component or said higher resolution tile images from said alignment data circuitry component for transmission without image compression across a video transmission interface.

Amended independent claim 86 recites (with emphasis added):

An image processing system comprising a video camera including multiple image creation circuitry; and a digital video recorder (DVR) including multiple image receiving circuitry; wherein said video camera is coupled to said DVR by at least one *video transmission interface*; wherein said multiple image creation circuitry comprises multi-image processing circuitry that comprises at least one window circuitry component configured to extract a selected portion of an original higher resolution image frame to form a lower resolution windowed partial image, at least one image scaler circuitry component configured to scale the lower resolution windowed partial image, at least one image deconstruction circuit component configured to segment an original image frame into two or more segmented higher resolution frames or tiled higher resolution images, *at least one alignment data circuitry component configured to insert at least one of tile identification information or horizontal alignment information or vertical alignment information into unused lines of said segmented higher resolution frames or tiled higher resolution images,* and at least one image mux circuitry component configured to select either said scaled lower resolution frames from said image scaler circuitry component or said higher resolution tile images from said alignment data circuitry component for transmission *without image compression across said video transmission interface* from said video camera to said digital video recorder (DVR) in multiple stream format.

The Office Action combines Kenoyer with Washino to reject a number of claims, including independent claims 78 and 86. However, Applicant first notes that there would be no motivation to combine Kenoyer's *network-based videoconferencing system* and *compressed and encoded communication signals* with the audio/video production system of Washino since Washino's formatting is solely based on type of image format standards (e.g., NTSC, PAL) and because Washino *merely matches natively timed digital to analog (i.e., identical frame rate) stream outputs*. Washino would be *incapable* of transmitting Kenoyer's compressed and encoded signals, and would be overloaded even assuming for sake of argument that such a combination were attempted. For this reason alone, independent claims 78 and 86 are

nonobvious over the combination of Kenoyer and Washino, as are the claims dependent therefrom.

Next, independent claims 78 and 86 are further nonobvious over the combination of Kenoyer and Washino since this combination *completely lacks* the limitation of “at least one alignment data circuitry component configured to insert at least one of tile identification information or horizontal alignment information or vertical alignment information into unused lines of said segmented higher resolution frames or tiled higher resolution images.” Page 5 of the Office Action states that Kenoyer teaches, among other things, “at least one alignment data circuitry component” and cites several figures and paragraphs of Kenoyer in this regard. However, the cited portions of Kenoyer disclose nothing related to insertion of tile identification information or horizontal alignment information or vertical alignment information into unused lines of segmented higher resolution frames or tiled higher resolution images. Nor does Washino disclose, teach or suggest anything in this regard. For this reason alone, independent claims 78 and 86, and the claims dependent therefrom, are further nonobvious over the combination of Kenoyer and Washino.

C. The Dependent Claims

Applicants note also that the dependent claims include additional limitations that render these claims even further novel and nonobvious over the cited references.

For example, dependent claims 82 and 90 each recite “at least one image reconstruction circuit component configured to reconstruct said segmented higher resolution frames or said tiled higher resolution images back into said original higher resolution image based on said alignment

information inserted by said alignment data circuitry component into said unused lines of said segmented higher resolution frames or tiled higher resolution images.”

Further, dependent claim 10 recites (in part) “segmenting at least a part of said original image into at least a first image tile segment comprising a first portion of said original image in a first digital image data stream, and a second image tile segment comprising a second portion of said original image in a second digital image data stream, . . . and reassembling said first and second tile segments from said third and fourth digital data streams to form said at least a part of said original digital image,” and dependent claim 75 recites (in part) “wherein said multi-stream image processing circuitry is further configured to segment at least a part of said original image into at least a first image tile segment comprising a first portion of said original image in a first digital image data stream, and a second image tile segment comprising a second portion of said original image in a second digital image data stream, . . . and wherein said DVR is configured to . . . reassemble said first and second tile segments from said third and fourth digital data streams to form said at least a part of said original digital image.”

Pages 9-10 of the Office Action rejects dependent claim 10 over the combination of Kenoyer and Washino, stating that this combination of references teaches “reassembling said first and second tile segments from said third and fourth digital data streams to form said at least a part of said original digital image” (*see* page 10 of the Office Action). However, *reassembly* of multiple tile segments is completely missing from Washino. Further, the paragraphs of Kenoyer that are cited by the Office Action for this proposition do not relate to *reassembly* of multiple tile segments and instead merely refer, for example, to the display of *two image views* on the screen 208 for the two video streams A and B (*see* paragraph 033), display of *a large section A 502*

defining an entire view of an image having a 700x400 resolution, while a small section B 504 defines a view having a 300x200 resolution in which a speaking participant from a remote conferencing station is displayed (see paragraph 0039 and Figure 5), and transmission of “a wide angle high resolution image including all participants at a conferencing site (e.g., section A 502) along with an inset zoomed view (e.g., section B 504) showing a particular speaking participant” (see paragraph 0040 and Figure 5) (emphasis added).

Nothing in Washino discloses, teaches or suggests *reassembly of segmented parts* of an image, nor *reconstruction* of segmented higher resolution frames or tiled higher resolution images “back into said original higher resolution image based on said alignment information inserted by said alignment data circuitry component into said unused lines of said segmented higher resolution frames or tiled higher resolution images”. Therefore, for at least the additional reason that the above-described limitations are *completely missing* from the cited references, dependent claims 10, 75, 82 and 90 are even further nonobvious over the cited references.

Favorable reconsideration is requested.

CONCLUSIONS

In view of the foregoing, it is submitted that all pending claims are in condition for allowance. Accordingly, favorable reconsideration and Notice of Allowance are courteously solicited.

The Examiner is invited to contact the undersigned at the phone number indicated below with any questions or comments, or to otherwise facilitate expeditious and compact prosecution of the application.

Respectfully submitted,

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